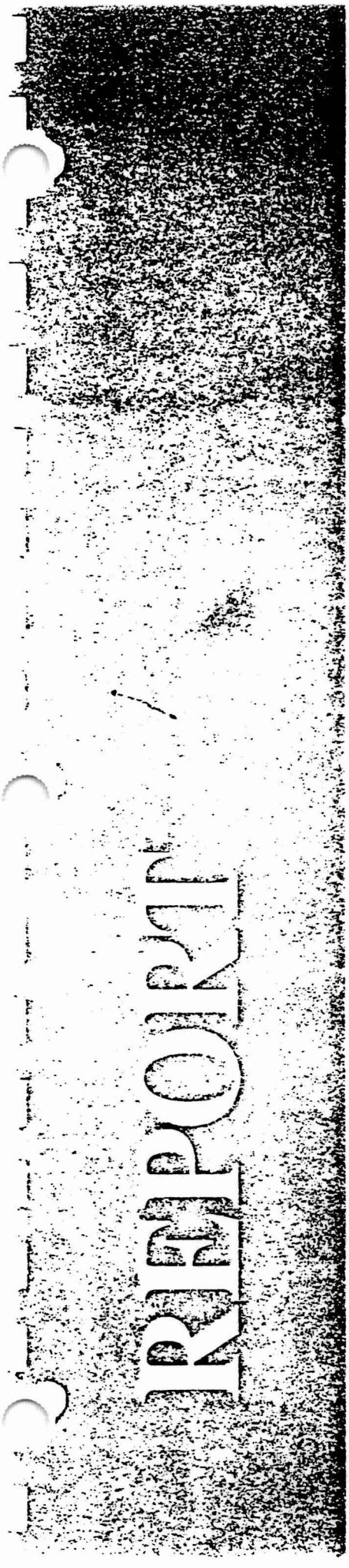
Appendix P

Report on Integrity of the Hazardous Waste Storage Area

APPENDIX P

REPORT ON INTEGRITY OF THE HAZARDOUS WASTE STORAGE BUILDING



REPORT ON
INTEGRITY OF THE
HAZARDOUS WASTE STORAGE BUILDING
AT THE
PUERTO RICO SUN OIL COMPANY
YABUCOA, PUERTO RICO

PREPARED BY
METCALF & EDDY DE PUERTO RICO, INC.
SAN JUAN, PUERTO RICO

OCTOBER 1990

TO WHOM IT MAY CONCERN

I, César M. Vincenty Pueyo, of legal age, married and resident of San Juan, Puerto Rico, hereby, **Certify:**

1. That I am a Registered Professional Engineer duly authorized to practice my profession in the Commonwealth of Puerto Rico, under License Number 7845.

2. That during October 1990, I made a visual inspection of the existing hazardous waste storage building at the Puerto Rico Sun Oil Company, in the municipality of Yabucoa, Puerto Rico.

3. That the purpose of said inspection was to verify that the facilities in general, and the floor slab in particular, appear to be structurally sound and adequately maintained.

4. That I have evaluated the materials handled inside the building and that they do not appear to react adversely to the materials of instruction of the building.

5. Whereas, based on my experience, it is my professional opinion that considering the structural integrity of the facility and the materials being stored, said structure can continue to be used as a hazardous waste storage facility.

IN WITNESS THEREOF I hereunto set my hand and Seal on this 12 day of October, 1990, in the city of San Juan, Puerto Rico.

CÉSAR M. VINCENTY
CERTIFICADO
INGENIERO
GRADUADO
7845
PUERTO RICO

César M. Vincenty Pueyo, P.E.
P.R. License Number 7845

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OBJECTIVE

The Puerto Rico Sun Oil Company is presently submitting a revised RCRA part B application for the storage of the Hazardous Waste generated at the site.

The purpose of this report is to evaluate the structural integrity of the Hazardous Waste Storage Building's (HWSB) concrete base and demonstrate the imperviousness of the base to the wastes handled there.

DESCRIPTION OF AREA

At present, Puerto Rico Sun Oil Company (PRSOC) operates a facility engaged in the refinement of crude oil.

The 252.25-acre Refinery complex is located east of the town of Yabucoa, and is generally bounded by PR Route 901 to the south, Puerto Yabucoa to the east, Santiago Creek to the north and private properties to west. PRSOC began operations in May of 1971 and currently processes 85,000 BPD (barrels per day) of crude oil. Major products include: kerosene, light distillates, naphtha, jet fuel, diesel fuel No. 2, No. 2 fuel oil, desulfurized gas oil, lube oil base stocks, residual fuels, aromatic extracts, slack wax and sulfur.

Figure 1 shows an aerial photograph overview of the facilities, and Figure 2 presents the location of PRSOC within the Yabucoa valley.

HWSB FACILITY

The HWSB facility is a concrete structure measuring 60 feet in width by 30 feet in depth located in the northeastern tip of the property, adjacent to the wastewater facilities for the refinery.

Historically, the HWSB has been used for the storage of wastes prior to shipping offsite for disposal.

Presently, the HWSB is used for the storage of Hazardous Waste container bags made from a highly abrasion and puncture resistant materials measuring approximately three and half ($3\frac{1}{2}$) feet on its sides, and with a height of up to six (6) feet, normally the bags are not filled up to that height.

The bags hold about 100 cubic yards of solids at an approximate weight of 4000 lbs per bag, each bag being placed on a four by four (4 x 4) feet pallet for its handling in the HWSB.

At this loading, the weight imposed on the floor slab is of the order of 2 psi. Even assuming a safety factor of 10 and assuming a safety weight distribution of the pallet is limited to an area of two by two (2 x 2) feet, the load on the slab would be less than 100 psi.

A preliminary evaluation demonstrate that this loading, in compression, is well within the compressive strength of concrete.

Figure 1

AERIAL PHOTOGRAPH OF PRSOC FACILITIES

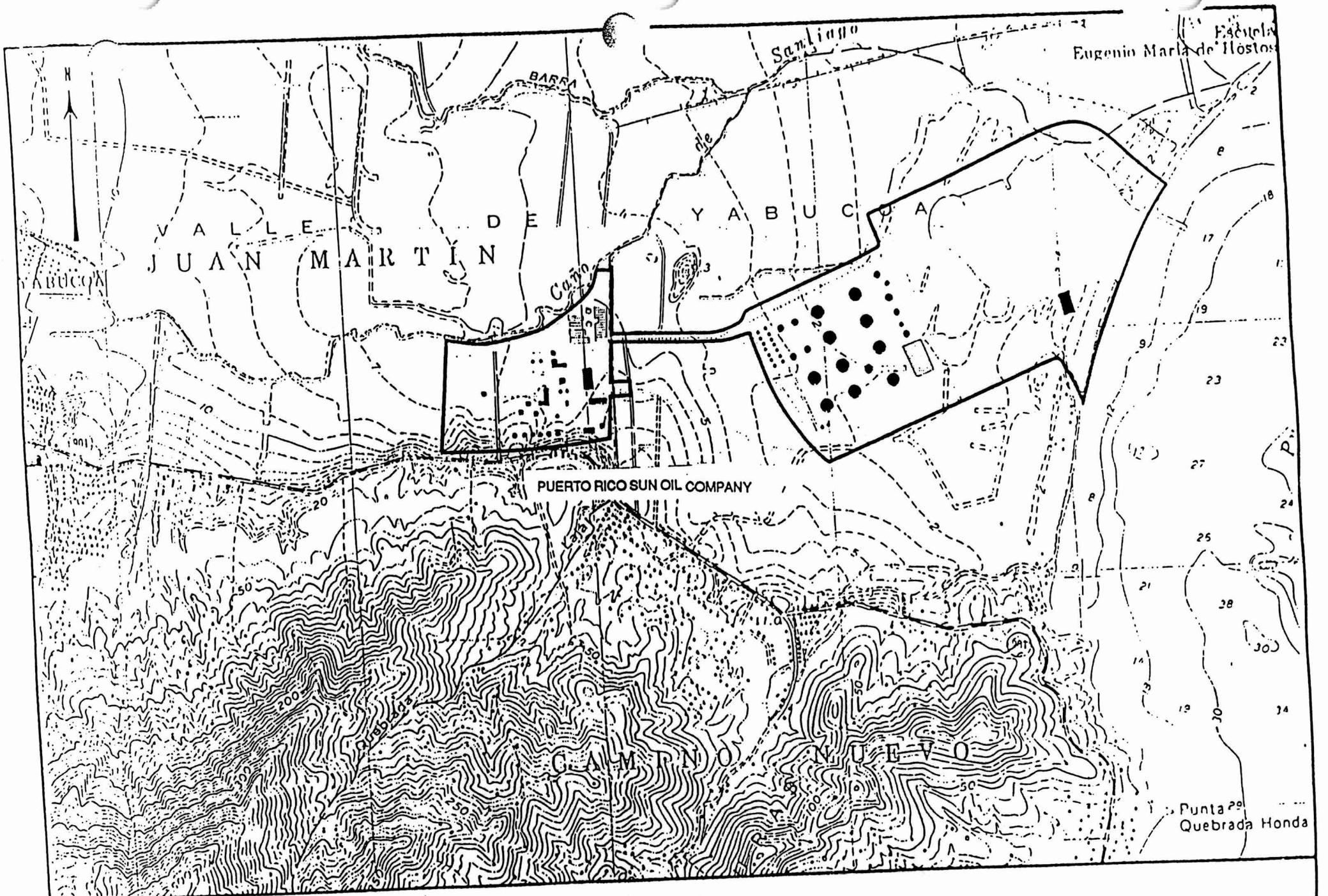

FIGURE 2
LOCATION MAP OF PUERTO RICO SUN OIL COMPANY

Source: USGS Quadrangle,
Punta Guayanes, Puerto Rico.

Nevertheless, an inspection of the facilities revealed no surface cracks or deterioration of the concrete surface.

At present, the Hazardous Waste is mixed with cement kiln dust to form a powder.

Based on the fact that the two product have a common raw material, it can thus be safely concluded that the cement kiln dust, by itself or when mixed with the hazardous waste product or products, should not negatively affect the surface or the structural integrity of the floor slab.

Furthermore, engineering judgement also establishes that the solids should not migrate through any cracks or crevices that may be present ,if any.